Appendix -- Amended Claims

1. (currently amended) A method for assaying ~~angiogenesis ex vivo;~~ the angiogenic potential of a particular tumor in a mammal; said method comprising the steps of:

(a) embedding a three-dimensional ~~mammalian~~ tissue sample in a matrix, wherein the tissue sample is taken from a particular tumor in a mammal; wherein the tissue sample has at least one cut surface exposing blood vessels; wherein the three-dimensional tissue sample comprises multiple layers of cells comprising blood vessels, supportive stromal elements, neural cells, and endothelial cells; ~~and other cells of the tissue; and~~ wherein the architecture of the tissue sample ~~, including blood vessels, supportive stromal elements, neural cells, and endothelial cells,~~ is substantially intact and has not been disrupted as compared to that of comparable tissue *in vivo*; and wherein the three-dimensional tissue sample does not consist of an isolated artery or an isolated vein;

(b) supplying to the embedded tissue sample a medium that supports the growth of the tissue sample;

(c) incubating the embedded tissue sample in the medium for a time sufficient to allow any angiogenic vessels ~~vessels, if any,~~ to grow into the matrix surrounding the tissue sample; and

(d) observing or measuring ~~the~~ any angiogenic vessels ~~vessels, if any,~~ that grow into the matrix surrounding the tissue sample;

whereby:

the growth of any angiogenic vessels into the matrix is a measure of the angiogenic potential of the particular tumor from which the tissue sample was taken.

2. (original) A method as recited in Claim 1, wherein the medium comprises a serum-free medium that supports the growth of the tissue sample; wherein the medium contains substantially no exogenous angiogenesis-enhancing factors and substantially no exogenous angiogenesis-suppressing factors.

3. (original) A method as recited in Claim 1, wherein the medium comprises serum.

4. (original) A method as recited in Claim 1, wherein the medium comprises an angiogenesis-enhancing factor.

5. (original) A method as recited in Claim 4, wherein the angiogenesis-enhancing factor is selected from the group consisting of platelet-derived growth factor, vascular endothelial growth factor, epidermal growth factor, fibroblast growth factor, and transforming growth factor β.

6. (original) A method as recited in Claim 1, wherein the matrix comprises fibrin.

7. (original) A method as recited in Claim 1, wherein the matrix comprises collagen.

8. (original) A method as recited in Claim 1, wherein the matrix comprises gelatin.

9. (original) A method as recited in Claim 1, wherein the matrix comprises agarose, agar, alginate, or silica gel.

10. (previously presented) A method as recited in Claim 1, wherein the matrix comprises Matrigel™ matrix.

11 - 12. (canceled)

13. (previously presented) A method as recited in Claim 1, additionally comprising the step of supplying a factor to the embedded tissue sample, and measuring the difference in angiogenesis for the tissue sample as compared to the angiogenesis of an otherwise identical and otherwise identically-treated control tissue sample that is not supplied with the factor; whereby the difference in observed angiogenesis is a measure of the angiogenic enhancement or angiogenic suppression characteristics of the supplied factor.

14 - 37. (canceled)

38. (currently amended) A method as recited in Claim 1, ~~wherein the tissue sample is a sample taken from a tumor; and~~ wherein said method additionally comprises the step of supplying an angiogenic suppression factor to the ~~embedded tumor~~ tissue sample, and measuring the difference in angiogenesis for the ~~tumor~~ tissue sample as compared to the angiogenesis of an otherwise identical and otherwise identically-treated control ~~tumor~~ tissue sample that is not supplied with the factor; whereby the measured difference in angiogenesis between the samples is a measure of the angiogenic suppression characteristics of the supplied factor against the tumor from which the sample was taken.

39. (previously presented) A method as recited in Claim 1, wherein said method additionally comprises the step of supplying an angiogenic stimulation factor to the embedded tissue sample, and measuring the difference in angiogenesis for the tissue sample as compared to the angiogenesis of an otherwise identical and otherwise identically-treated control tissue sample that is not supplied with the factor; whereby the measured difference in angiogenesis between the samples is a measure of the angiogenic stimulation characteristics of the supplied factor for the tissue from which the sample was taken.

40 - 41. (canceled)